REMARKS/ARGUMENTS

Claims 1, 4-8 and 22-26 are pending in the present application. Claims 1, 4, 6-8, 22, 25 and 26 were amended; and claims 9-12 and 15-20 were canceled. No claims were added. Support for the claim amendments can be found in the specification, for example, on page 7, line 5-page 8, line 8 and in Figure 2B. Reconsideration of the claims is respectfully requested in view of the above amendments and the following comments.

In this Amendment, Applicants have amended claims 1, 4, 6-8, 22, 25 and 26 and canceled claims 9-12 and 15-20 from further consideration in this application. Applicants are not conceding that the subject matter encompassed by claims 1, 4, 6-12, 15-20, 22, 25 and 26 prior to this amendment is not patentable over the cited art. Applicants have amended claims 1, 4, 6-8, 22, 25 and 26 and canceled claims 9-12 and 15-20 from further consideration in this application solely to facilitate expeditious prosecution of the remaining claims. Applicants respectfully reserve the right to pursue additional claims, including claims 1, 4, 6-12, 15-20, 22, 25 and 26 as presented prior to this Amendment in one or more continuing applications.

I. 35 U.S.C. § 103, Obviousness

The Examiner has finally rejected claims 1, 4-12, 15-19, 22-23, 25-26 under 35 U.S.C. § 103 as being unpatentable over Alfieri et al., U.S. Patent Number 5,666,486 (hereinafter "Alfieri"), and further in view of Liron, U.S. Patent Number 5,598,532 (hereinafter "Liron"), and further in view of Bereiter, U.S. Patent Number 5,909,217 (hereinafter "Bereiter"). This rejection is respectfully traversed.

In finally rejecting the claims, the Examiner states:

> As per claims 1, and 15, Alfieri discloses a method for allocating a service on a network, as claimed, comprising:
>
> collecting a set of performance data (see column 10, lines 40-46, where performance statistics implies the collection of performance data);
>
> identifying a plurality of node clusters in response to said collection of said set of performance data (see column 10, lines 40-46, where a service is registered to particular nodes that are chosen based on performance statistics);
>
> correlating at least one property of each of the identified node clusters with at least one performance rule to determine a compliance of the node cluster to the performance rule (see column 10, lines 54-60);

a map as a result of said correlation, said map including a first cluster of said plurality of clusters for supporting the service on the network (see Alfieri column 9, line 56 - column 10, line 5, where a map is considered tracking (i.e. mapping nodes to clusters) which nodes are in the cluster and where the service has been allocated); and

allocating the service to one of the complying node clusters (see column 11, lines 7-25, where a client service is allocated to a particular node cluster).

Although the system disclosed by Alfieri shows substantial features of the claimed invention (discussed above), it fails to disclose that the performance data is representative of a set of physical characteristics of the network.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Alfieri, as evidenced by Liron.

In an analogous art, Liron discloses collecting a set of performance data representative of a set of physical characteristics of the network (see column 5, lines 19-36).

Given the teaching of Liron, a person having ordinary skill in the art would have obviously recognized the desirability and advantages of modifying Alfieri by collecting performance data representative of a set of physical characteristics of the network, such as disclosed by Liron, in order to improve traffic flow and balance traffic flow requirements between work groups (see Liron column 2, lines 12-22).

Although the system disclosed by Alfieri in view of Liron shows substantial features of the claimed invention (discussed above), it fails to disclose showing the map.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Alfieri in view of Liron, as evidenced by Bereiter.

In an analogous art, Bereiter discloses a large system status map provided to the user at three different levels of detail (see Abstract). Bereiter also showing a map of a first cluster of a plurality of clusters (see column 4, lines 35-43), where the cluster can be shown based on chosen characteristics such as, displaying a status of a software distribution to the cluster (see column 6, lines 7-12).

Given the teaching of Bereiter, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Alfieri in view of Liron by showing a map, such as disclosed by Bereiter, in order to zoom in on selected clusters in a large scale distributed computing environment. Furthermore, since Bereiter shows a selection of a cluster to show based on the percentage complete of a software distribution, it would be obvious that the system of Bereiter could be used to show a cluster that is selected for service allocation.

Final Office Action dated April 8, 2008, pp. 2-3.

Claim 1, as amended herein, is as follows:

1. A method for allocating a service in a distributed data processing system, said method comprising:

collecting a set of performance data representative of a set of physical characteristics of the distributed data processing system to form a collection of a set of performance data;

providing, using said collection of a set of performance data, cluster data that identifies a plurality of node clusters in said distributed data processing system, wherein a node cluster comprises an aggregation of nodes;

correlating at least one property of each of the of the identified plurality of node clusters with at least one performance rule required for supporting the service to determine a compliance of each of the plurality of node clusters to the at least one performance rule for supporting the service;

showing each node cluster of the plurality of node clusters that complies with the at least one performance rule for supporting the service; and

allocating the service to one of the node clusters that complies with the at least one performance rule.

The Examiner bears the burden of establishing a *prima facie* case of obviousness based on prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The prior art reference (or references when combined) must teach or suggest all the claim limitations. *In re Royka,* 490 F.2d 981, 180 USPQ 580 (CCPA 1974). In determining obviousness, the scope and content of the prior art are… determined; differences between the prior art and the claims at issue are…ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background the obviousness or non-obviousness of the subject matter is determined. *Graham v. John Deere Co.*, 383 U.S. 1 (1966). "Often, it will be necessary for a court to look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue." *KSR Int'l. Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007). "*Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.* Id. (citing *In re Kahn*, 441 F.3d 977, 988 (CA Fed. 2006))."

In the present case, the Examiner has failed to establish a *prima facie* case of obviousness because neither Alfieri, nor Liron nor Bereiter nor their combination teaches or suggests all the claim limitations. With respect to claim 1, for example, neither Alfieri, nor Liron nor Bereiter nor their combination teaches or suggests "providing, using said collection of a set of performance data, cluster data that identifies a plurality of node clusters in said distributed data processing system, wherein a node cluster comprises an aggregation of nodes", or "correlating at least one property of each of the of the identified plurality of node clusters with at least one performance rule required for supporting the service to determine a compliance of each of the plurality of node clusters to the at least one performance rule for supporting the service."

Alfieri is directed to a mechanism for assigning responsibilities to nodes in a cluster. In rejecting the claims, the Examiner cites to column 10, lines 40-46 of Alfieri as disclosing identifying a plurality of node clusters in response to a collection of a set of performance data. This portion is reproduced below for the convenience of the Examiner:

> The choice of which node is assigned a particular responsibility, as part of a registration operation, is guided by a set of choosing parameters, or database items, 64. These choosing parameters may include a set of database items which specify when, where, and under what conditions a service should be registered. However, additional criteria may be included in the choosing function including recent performance statistics of particular nodes.

Alfieri, Column 10, lines 40-46.

The above portion of Alfieri describes assigning a particular responsibility to a node in a node cluster as part of a registration operation. The registration operation is described in column 10, lines 23-26 as being a process where one node or more than one node in a cluster can be assigned responsibility for a previously defined client service. Alfieri does not, however, disclose or suggest providing cluster data that identifies a plurality of node clusters in a distributed data processing system as recited in claim 1. Alfieri is concerned only with nodes in a cluster, and not with identifying a plurality of node clusters. Therefore, Alfieri does not disclose or suggest "providing, using said collection of a set of performance data, cluster data that identifies a plurality of node clusters in said distributed data processing system, wherein a node cluster comprises an aggregation of nodes" as recited in amended claim 1.

Alfieri also does not disclose or suggest "correlating at least one property of each of the of the identified plurality of node clusters with at least one performance rule required for supporting the service to determine a compliance of each of the plurality of node clusters to the at least one performance rule for supporting the service" as recited in amended claim 1. The Examiner cites to column 10, lines 54-60 of Alfieri with respect to this feature

> Node Preferences--Node preferences result from the fact that not all nodes will support all client services equally well. Node preferences may be specified as an unordered list or as an ordered list. Selection among unordered members will be influenced by recent performance characteristics of the cluster. Ordered lists are processed beginning with the highest rank member.

Alfieri, column 10, lines 54-60.

This portion of Alfieri relates to node preferences within a cluster. I t does not disclose or suggest and is not related to "correlating at least one property of each of the of the identified plurality of node clusters with at least one performance rule required for supporting the service to determine a compliance of each of the plurality of node clusters to the at least one performance rule for supporting the service" as recited in amended claim 1.

The Examiner acknowledges that Alfieri does not disclose that the performance data is representative of a set of physical characteristics of a network, and cites Liron as disclosing this feature. Liron is directed to optimizing the configuration of a computer network based on network performance objectives. Liron, however, does not supply the deficiencies in Alfieri as described above.

The Examiner also acknowledges that neither Alfieri nor Liron discloses a map as was previously recited in claim1, and cites Bereiter as disclosing this feature. Bereiter disclose a mechanism to provide information about large networks using status maps, and does not supply the deficiencies in Alfieri and Liron as discussed above.

Therefore, neither Alfieri, nor Liron nor Bereiter nor their combination teaches or suggests "providing, using said collection of a set of performance data, cluster data that identifies a plurality of node clusters in said distributed data processing system, wherein a node cluster comprises an aggregation of nodes", or "correlating at least one property of each of the of the identified plurality of node clusters with at least one performance rule required for supporting the service to determine a compliance of each of the plurality of node clusters to the at least one

performance rule for supporting the service" as recited in claim 1, and the Examiner has not established a *prima facie* case of obviousness in rejecting claim 1. Claim 1, accordingly, patentably distinguishes over the cited art in its present form.

Independent claim 22 also patentably distinguishes over the cited art for similar reasons as discussed above with respect to claim 1. Claims 4-8 depend from and further restrict claim 1, and claims 23, 25 and 26 depend from and further restrict claim 22. These claims also patentably distinguish over he cited art, at least by virtue of their dependency. Claims 9-12 and 15-19 have been canceled and the rejection with respect to those claims is now moot.

Therefore, the rejection of claims 1, 4-12, 15-19, 22-23, 25-26 under 35 U.S.C. § 103 has been overcome.

II. 35 U.S.C. § 103, Obviousness

The Examiner has rejected claims 14, 20, and 24 under 35 U.S.C. § 103 as being unpatentable over Alfieri in view of Liron in view of Bereiter as applied to claims 9, 16, and 22 above, and in further view of Johnson, U.S. Patent Number 6,078,946 (hereinafter "Johnson"). This rejection is respectfully traversed.

In rejecting the claims, the Examiner states:

> Although Alfieri in view of Liron in view of Bereiter disclose substantial features of the claimed invention (discussed above), it fails to directly disclose the module being a neural network.
>
> However, these features are well known in the art and would have been an obvious modification of the system disclosed by Alfieri in view of Liron in view of Bereiter, as evidenced by Johnson.
>
> In an analogous art, Johnson discloses a network management system, which uses a self organizing neural network module for optimizing resources (see column 3, lines 6-30 and column 5, lines 41-46).
>
> Given the teaching of Johnson, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Alfieri in view of Liron in view of Bereiter by employing a neural network module, such as disclosed by Johnson, in order to gain the best results available for a set of input data (column 3, lines 19-23).

Final Office Action dated April 8, 2008, page 6.

Claims 14 and 20 have been canceled. Therefore, the rejection with respect to those claims is now moot. Claim 24 depends from and further restricts claim 22. Johnson does not

supply the deficiencies in Alfieri, Liron and Bereiter with respect to claim 22 as discussed above. Therefore, claim 24 patentably distinguishes over the cited art, at least by virtue of its dependency.

Therefore, the rejection of claims 14, 20, and 24 under 35 U.S.C. § 103 has been overcome.

III. Conclusion

It is respectfully urged that the subject application is patentable over the cited references and is now in condition for allowance, and it is respectfully requested that the Examiner so find and issue a Notice of Allowance in due course.

The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

/Gerald H. Glanzman/

Gerald H. Glanzman
Reg. No. 25,035
Yee & Associates, P.C.
P.O. Box 802333
Dallas, TX 75380
(972) 385-8777
Attorney for Applicants